

Sedimentary Rocks (GEO 416M)

Fall 2015

Lecture: Meets TTh 9:30 AM-11:00 AM, JGB 2.216

Instructors: Dr. Wonsuck Kim, delta@jsg.utexas.edu
Office: EPS 3.154, Office hours: TTh 3:00 PM-4:00 PM & by appointment

Teaching Assistant:

Laboratory: Meets in EPS 2.136. TA will hand out laboratory manual in each session.

Date	Lecturer	Topic	Reading*
27-Aug	WK	Class Intro: Overview of Sedimentary Deposits	B (Intro), B6
1-Sept	WK	Sediment Production (Weathering)	B3
3-Sept	WK	Grain Parameters	B1
8-Sept	WK	Grain Mineralogy	B5
10-Sept	WK	Sediment Transport	B2
15-Sept	WK	Bedform	B4
17-Sept	WK	Other Sedimentary Structures	B4
22-Sept	WK	EXAM 1 (Siliciclastic Sedimentary Rocks 1)	
24-Sept	WK	Aeolian Systems	B8.3
29-Sept	WK	Rivers and Alluvial Fans	B8.2
1-Oct	WK	Deltas	B9.2
6-Oct	WK	Shoreface and Deepwater Sedimentation	B10
8-Oct	WK	Stratigraphic Concepts	B13, B16
13-Oct	WK	EXAM 2 (Siliciclastic Sedimentary Rocks 2)	
15-Oct	WK	Chemical Sediments	P&S 13 & 14
20-Oct	WK	Carbonates Mineralogy and Geochemistry	T&W 1.3;
22-Oct	WK	Carbonate Factory	P&S 12.1
27-Oct	WK	Carbonate Constituents: Skeletal Grains	T&W 1.2
29-Oct	WK	Carbonate Constituents: Non-skeletal Grains	T&W 1.4 & 1.9
3-Nov		No Class (GSA)	
5-Nov	WK	EXAM 3 (Carbonate Sedimentary Rocks 1)	
10-Nov	WK	Carbonate Mud & Porosity	T&W 1.7
12-Nov	WK	Carbonate Classification and Facies	B11, T&W 2
17-Nov	WK	Modern Carbonate Facies and Depositional Systems	T&W 4; S 14
19-Nov	WK	Carbonate Depositional Systems: Peritidal	T&W 4.3; S 14
24-Nov		No Class (Thanksgiving week)	
26-Nov		Thanksgiving	
1-Dec	WK	Carbonate Depositional Systems: Slopes & Reefs	T&W 2.10; T&W 4.5
3-Dec	WK	EXAM 4 (Carbonate Sedimentary Rocks 2)	

LABS

Date	Topic
Week of 31-Aug	0. Intro
Week of 7-Sept	1. Grain Parameters
Week of 14-Sept	2. Grain Mineralogy
Week of 21-Sept	3. Bedform Sedimentary Structures
Week of 28-Sept	4. Other Sedimentary Structures
Week of 5-Oct	5. Reconstruction of Sediment Transport Conditions in Waller Creek (field trip)

	& Interdisciplinary Science Learning Project
Week of 12-Oct	1 LAB EXAM
Week of 19-Oct	6. Sandstone Diagenesis
Week of 26-Oct	7. Stratigraphic Correlation
Week of 2-Nov	8. Core Logging
Week of 9-Nov	9. Deep-water Stratigraphy (seismic)
Week of 16-Nov	10. Carbonate Rocks and Classification
Week of 23-Nov	11. Carbonate Rocks in Thin Sections
Week of 30-Nov	2 LAB EXAM

Final Exam: none

***Required course materials:**

- **B: Boggs, *Principles of Sedimentology and Stratigraphy* (4th or 5th edition)**

- **Hand lens** (10X triplet recommended), a calculator (for the labs #1 and #9), a ruler, and colored pencils are required for lab. Both the textbook & hand lens are available at the University Coop.

- **iClicker: version 1 or 2**

***Other texts (library reserve):**

T&W: Tucker, M.E. and Wright, V.P. (1990), *Carbonate Sedimentology*.

S: Wolfgang Schlager, (2005), *Carbonate Sedimentology and Sequence Stratigraphy*

P&S: Prothero, D.R. and Schwab, F. (2004), *Sedimentary Geology*.

Lecture notes: Lecture notes and readings from other texts can be found on Canvas (<http://canvas.utexas.edu>).

Class policy, procedures and grading: Historically, there is a very strong correlation between exam grades and attendance.

- There will be four lecture exams; each will consist of multiple-choice and short answer questions and will be worth 100 points. These four lecture exams will constitute 50% of the final class grade.
 - o There are no make-up lecture exams in this class. Please look at the exam schedule above and make sure that you do not miss any exams.
- There will be one or two iClicker questions each class. Each is a multiple-choice question and will be worth 100 points. A correct answer will give 100 points otherwise 50 points. The iClicker questions will make up 20% of the final class grade.
 - o There are no make-up iClicker quizzes in this class. This is also for improving attendance. You will get at least 50 points per question even though your answer is wrong.
- There will be 2 laboratory exams worth a total of 100 points. The lab score will constitute 30% of the final class grade.
 - o Make-up lab exams are at the discretion of your TA and will be oral examinations.
 - o LAB ATTENDANCE POLICY – More than 3 absences and the final lab score will be deducted 10 points; an additional 5 points will be deducted for each additional 2 absences.
- There are no extra credit assignments in this course except 1 point toward the final average grade to someone participates in the Interdisciplinary Geoscience Learning Project during the sixth week of Lab.
- Whole letter grades (no +/-) are assigned at the end of the semester based on the following (The grade cutoffs are subject to change based on the overall performance of the class):
 - o ≥ 84.9 : A
 - o $< 84.9 \ \& \ \geq 74.9$: B
 - o $< 74.9 \ \& \ \geq 64.9$: C
 - o $< 64.9 \ \& \ \geq 49.9$: D

- < 49.9: F

COURSE EXPECTATIONS

• **Laptop Use Policy** – Classroom Laptop use for taking notes related to this course only. Laptop activities unrelated to this course will lead to dismissal from class. **Repeat offenses will result in a filing of a report of academic problems.**

• **Other Electronic Devices (Cell phone, Blackberry, I-Phone, etc.) Use Policy** – **All devices must be turned off during class.** Any use of these devices, including texting, web-surfing, etc. will lead to dismissal from class. **Repeat offenses will result in a filing of a report of academic problems.**

IMPORTANT INFORMATION ON UNIVERSITY POLICIES

The University of Texas Honor Code

The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the University is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

Religious Holidays – Religious holy days sometimes conflict with class and examination schedules. If you miss an examination, work assignment, or other project due to the observance of a religious holy day you will be given an opportunity to complete the work missed within a reasonable time **after** the absence. It is the policy of The University of Texas at Austin that **you must notify each of your instructors at least fourteen days prior to the classes scheduled on dates you will be absent** to observe a religious holy day.

Documented Disability Statement - Any student with a documented disability who requires academic accommodations should contact Services for Students with Disabilities at 471-6259 (voice) or 1-866-329-3986 (Video Phone) as soon as possible to request an official letter outlining authorized accommodations. See Website below for more information: <http://deanofstudents.utexas.edu/ssd/providing.php>